

REMARKS

Favorable reconsideration of this application as presently amended and in light of the following discussion is respectfully requested. Claims 1-20 are presented in the present application. Claim 1 is amended by the present amendment. No new matter is added.

Applicants respectfully request entry of this amendment under 37 CFR §1.116 because the amendments of claim 1 should not entail any further search by the Examiner since no new features are being added (the added recitation is similar to recitations in claim 15) and, thus, no new issues are being raised.

OBJECTION TO THE DRAWINGS

In the outstanding Office Action, the drawings are objected to apparently relative to the feature “a first set of temperature sensors, a second set of temperature sensors and a third set of temperature sensors” as recited in claim 5. Applicants respectfully submit that the recited series of sensors are illustrated in Figure 1. Specifically, on page 7, lines 4-13 of the originally filed specification specifically it is stated:

The signal acquisition device comprises a series of sensors suitable for detecting signals proportional to parameters characteristic of the functioning state of the combustion unit 10.

This series of sensors comprises a number of temperature sensors situated in the combustion chamber 11.

Said series of temperature sensors comprises a first set of temperature sensors 60, a second set of temperature sensors 61 and a third set of temperature sensors 62.

The location of the first set of temperature sensors 60, the second set of temperature sensors 61, and the third set of temperature sensors 62 are shown in Figure 1. A person of ordinary skill in the art would understand that multiple sensors for different temperature ranges or using different principles may have the same location. Applicants have clearly described in the specification that 60, 61, and 62 are locations of “sets of sensors”, respectively. Accordingly, Applicants respectfully request this objection be withdrawn.

CLAIM REJECTIONS UNDER 35 U.S.C. §112

In the outstanding Office Action, claims 1-20 are rejected under 35 U.S.C. § 112, second paragraph due to the recitation “fluidly connect” different areas of the combustion chamber, in independent claims 1 and 15. Applicants believe that a person of ordinary skill in the art would understand the phrase “fluidly connect” in view of the description and the figure as meaning that a fluid can travel from the first area to the third area along the claimed valve. For example, on page 6, lines 6-10, it is stated:

Said combustion unit 10 also comprises a duct 75 which connects a first area 12 and a third area 14 of the combustion chamber 11.

The second valve 21, which regulates the air that flows through it, is positioned on the duct 75.

In view of the above, Applicants respectfully request the rejections under 35 U.S.C. § 112, second paragraph be withdrawn.

CLAIM REJECTIONS UNDER 35 U.S.C. §103

Claims 1-5, 7-13, 15-16, and 19-20 are rejected under 35 U.S.C. § 103(a) as unpatentable over Nakajima et al. (U.S. Patent No. 5,600,948, herein "Nakajima") in view of Maus et al. (U.S. Patent No. 5,428,956, herein "Maus"). Claims 6, 14, and 17-18 are rejected under 35 U.S.C. § 103(a) as unpatentable over Nakajima in view of Maus and further in view of Rostrup-Nielsen (U.S. Patent No. 6,109,018).

The Office Action fails to set forth specific reasons for rejecting under 35 U.S.C. §103 independent claim 15 and claims 16 and 18-20. Independent claim 15 patentably distinguishes over the applied references at least by reciting "an air distribution valve configured [...] to regulate an amount of air flowing to the third area from the first area **outside the combustion chamber**" (emphasis added). Applicants found no evidence that the applied references alone and in combination anticipate or render obvious this feature recited in claim 16.

Having a part of the air flowing outside the combustion chamber has the effect that this air flow bypasses the catalyst (which is located **inside** the combustion chamber between the first area and the third area). This effect has the advantage that the operation of the catalyst can be optimized (see page 2, line 24 to page 3, line 7, and page 13, lines 1-10 of the originally filed specification) depending on acquired information (from the processed signals) relative to the functioning state of the combustion chamber.

At least for this reason independent claim 15 and claims 16-20 patentably distinguish over the applied references.

Independent claim 1 is amended herewith similar to claim 15 to specify that the “second air distribution valve [is] configured [...] to regulate an amount of air flowing to the third area from the first area **outside the combustion chamber**” (emphasis added).

The claim amendments are supported by the originally filed application, for example, page 8, lines 12-16, page 11, lines 2-7, and Figure 1. No new matter is believed to be added.

The Office Action appears to take the position that the throttle valve 9 in Nakajima corresponds to the recited second air distribution valve. However, the throttle valve 9 in Nakajima does not anticipate or render obvious a valve configured to regulate an amount of air flowing **outside** of the combustion chamber, from a first area of the combustion chamber to a third area of the combustion chamber.

Applicants found no evidence that the other applied references, Maus and Rostrup-Nielsen, correct or compensate for the above-identified failure of Nakajima to anticipate or render obvious all the features in amended independent claim 1. Applicants found no teaching or suggestion in any of the applied references that air may flow from one area of the combustion chamber to another area of the combustion chamber **outside** the combustion chamber.

At least for this reason, amended independent claim 1 and claims 2-14 depending from claim 1 patentably distinguish over the applied references.

CONCLUSION

Accordingly, in light of the above discussion and in view of the enclosed amendments, the present application is believed to be in condition for allowance and an early and favorable action to that effect is respectfully requested. If, however, there are any remaining unresolved issues that would prevent the issuance of the Notice of Allowance, the Examiner is urged to contact the undersigned at (540) 479-4111 in order to expedite prosecution of this application.

Respectfully submitted,
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